

## June 2016 Climate Review for Puerto Rico and the U.S. Virgin Islands.

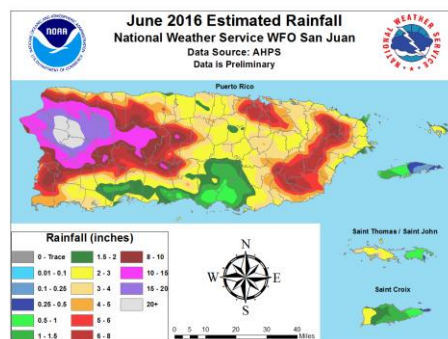
**Synopsis:** *Below normal rainfall was observed across most of the area with warm to hot temperatures. There is a slight shift in probabilities to near to above normal rainfall during the upcoming months.*

### Summary

A fair and mainly stable weather pattern prevailed across the local islands during most of the month. Diurnal and locally induced showers and thunderstorms were observed across sections of western PR during most of the afternoons, producing locally heavy rainfall amounts. There were, however, some instances throughout the month when more widespread activity was observed due to different features. On June 1<sup>st</sup> and 2<sup>nd</sup>, an upper level trough lingered across the western Caribbean, bringing surges of abundant low-level moisture across the region and aiding in the formation and widespread coverage in the shower and thunderstorm activity, mainly across PR. Both June 7<sup>th</sup>-8<sup>th</sup> and June 19<sup>th</sup>- 20<sup>th</sup> featured the passage of a tropical wave. Although the most intense part of these tropical waves passed to the south of the forecast area, areas of showers and thunderstorms still impacted the islands. Lastly, on June 21<sup>st</sup> -22<sup>nd</sup> a low-level easterly perturbation affected the islands producing several periods of showers.

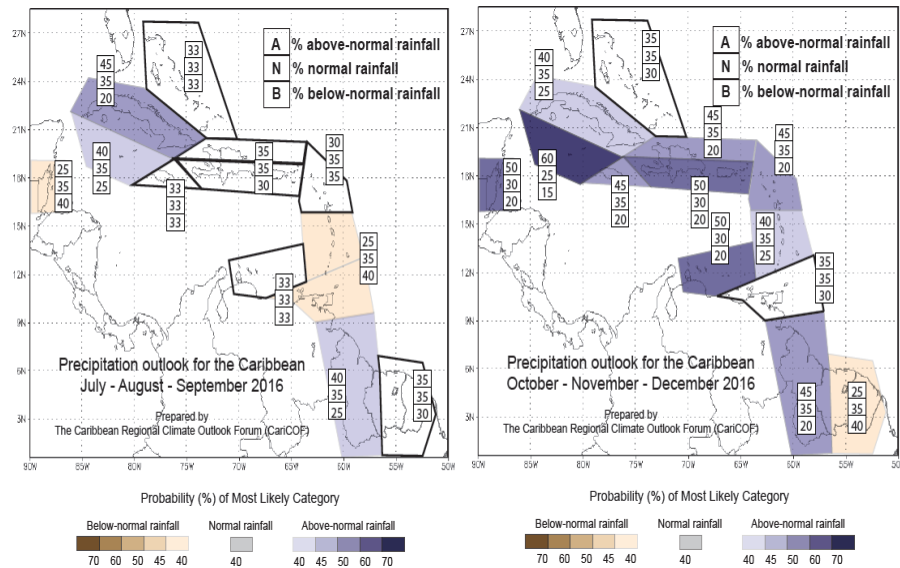
Based on the Cooperative Observer Network Data (COOP), 79 % of the normal rainfall was observed across Puerto Rico. Preliminarily, an average rainfall total of 3.58 inches was measured, which is 0.95 inches below normal (Table 1). Across St. Croix, an average rainfall total of 1.22 was observed, which is also below the normal rainfall (Table 1). At the primary climatological data sites, a rainfall deficit of 1.45 and 0.21 inches was observed at Henry E. Rohlsen Airport in Saint Croix (TISX) and Cyril E King Airport in St Thomas (TIST) respectively.

The mean temperature for Puerto Rico was 80.3°F, which is approximately 1.3°F warmer than the 30-year average from the National Centers for Environmental Information (NCEI). Temperatures across Puerto Rico ranged from 95°F in Manati on the 15<sup>th</sup> of June, to 62°F in Toro Negro on June 27<sup>th</sup>. The mean temperature at TISX and TIST was 83.9 and 85.2°F, which is 0.9 and 1.7°F above normal respectively. In fact, June 2016 ended as the 5<sup>th</sup> warmest June on record at IST.



**Figure 1. Rainfall Totals based on AHPS (click on the image to enlarge)**

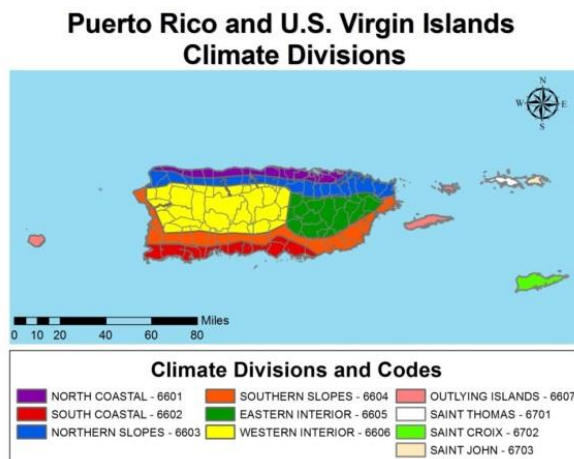
## Looking Ahead



Sea Surface Temperature (SST) anomalies in El Niño region are currently near neutral and most of the models are suggesting La Niña likely to peak by October-November-December (OND) 2016. Tropical North Atlantic SSTs tend to be warmer than average during a La Niña, and are currently above average throughout the Caribbean Islands. July-August-September (JAS) rainfall in the Caribbean is likely to be near to above normal in Cayman, Cuba and Guyana, but near to below normal in Barbados, Belize, Trinidad and Tobago, and the Windwards. There is low predictability elsewhere at this time. Although global models show limited signal during JAS, there is a slight shift in probabilities to near to above normal rainfall for OND.

More Info: <http://rcc.cimh.edu.bb/long-range-forecasts/caricof-climate-outlooks/>

## Average Rainfall Accumulation per climate zones based on COOP



	North Coastal	South Coastal	Northern Slopes	Southern Slopes	Eastern Interior	Western Interior	All PR	St Croix
Observed (Jun)	4.45	3.26	1.52	3.09	3.61	4.40	3.58	1.22
Normal (Jun)	4.71	2.66	4.96	3.54	6.39	4.93	4.53	2.60
% PON (Jun)	94	123	31	87	56	89	79	47
Accumulated YTD	26.82	15.43	24.21	23.89	33.58	30.12	26.45	18.23
Normal accumulation YTD	27.00	14.66	28.15	19.49	32.31	28.25	24.98	14.09
% PON accumulated YTD	99	105	86	123	104	107	106	129

Table 1. Jun 2016 and Year to date (YTD) Rainfall (inches). Percent of Normal (PON).

## Historical Rainfall and Temperature

	Puerto Rico		San Juan Area		IST		ISX	
1	2014	1.66	2012	0.16	2007	0.07	2001	0.10
2	2012	1.68	1985	0.29	2012	0.08	1985	0.12
3	1997	2.23	2014	0.77	2014	0.14	2012	0.26

Table 2. Driest June on record.

	Puerto Rico		San Juan Area		IST		ISX	
1	1962	9.91	2011	13.60	2010	9.51	1987	7.83
2	1979	9.89	1902	12.22	1956	8.29	2011	7.31
3	1970	9.65	1938	11.76	1983	6.97	2010	7.03

Table 3. Wettest June on record.

	Puerto Rico**		San Juan Area		IST		ISX	
1	1948	81.3	2012	85.7	1994	86.4	1980	85.6
2	1969	80.6	1983	85.4	1996	86.2	1972	85.0
3	2012	80.5	2014	85.2	1979	86.1	1998	84.6

Table 4. Warmest June on record.

	Puerto Rico**		San Juan Area		IST		ISX	
1	1943	69.8	1913	77.8	1956	80.0	1982	79.5
2	1940	71.2	1923	78.2	1976	81.0	1979	80.2
3	1941	72.3	1943	78.4	1981	81.6	1955	80.6

Table 5. Coolest June on record.

\*\* Following years are not included: 1956, 1957, 1959, 1960, 1967, 1973, 1974, 1979, 1980, 1981 and 2007 \*\*

	Puerto Rico	San Juan Area	IST	ISX
Temperature	79.0	83.3	83.5	85.0
Rainfall	4.68	4.41	2.53	2.31

Table 6. Normal Values for June

## Monthly and Seasonal Highlights for Primary Climatological Data Sites.

	June	July	August	Season	Year to Date
San Juan Area	9 <sup>th</sup> warmest (83.8F)	---	---	---	8 <sup>th</sup> warmest 80.4F
IST	5 <sup>th</sup> warmest (85.2)	---	---	---	4 <sup>th</sup> warmest 81.7F
ISX	10 <sup>th</sup> warmest (83.9)	---	---	---	5 <sup>th</sup> warmest 80.8F

Table 7. Summer 2016

## Additional Highlights Based on COOP Data

### Wettest Days

Station	Inches (inches)	Date
MAGUEYES ISLAND	3.57	6/20/2016
TOA BAJA LEVITOWN	2.89	6/2/2016
JUANA DIAZ CAMP	2.05	6/27/2016

### Highest Maximum Temperatures

Station	Temperature (°F)	Date
MANATI 2 E	95	6/15/2016
LAJAS SUBSTN	94	6/17/2016
MAGUEYES ISLAND	94	6/27/2016

### Lowest Minimum Temperatures

Station	Temperature (°F)	Date
TORO NEGRO FOREST	62	6/27/2016
MARICAO 2 SSW	62	6/27/2016
AIBONITO 1 S	65	6/12/2016

Data is preliminary and has not undergone final quality control by the National Centers for Environmental Information / NCEI/. Therefore, this data is subject to revision. Report based on data received until July 7<sup>th</sup> 2016.

*Puerto Rico Climate Record Period: 1940 to 2016*

*San Juan Metro Area Climate Record Period: 1898 to 2016 (Primary climatological site)*

*Cyril E. King Airport/St Thomas Climate Record Period: 1953 to 2016 (Primary climatological site)*

*Henry E. Rohlsen Airport/St Croix Climate Record Period: 1951 to 2016 (Primary climatological site)*